

CLAIMS

1. An injector for injecting fuel under high pressure into a combustion chamber of an internal combustion engine, comprising an injector housing; an inlet ²²connectable with a high pressure collecting chamber; a valve ³body for controlling said inlet from the high pressure collecting chamber and movably received in said housing; a nozzle ³⁶chamber provided in said housing; a nozzle ²⁵needle which due to pressure changes in said nozzle chamber can open or close; a sealing ²⁴spring which biases said nozzle needle, said nozzle needle being provided with pressure ^{31 & 40}stages which are loadable by a hydraulic ²⁸spring and a pressure acting in said inlet from the high pressure collecting chamber.

2. An injector as defined in claim 1; and further comprising means forming a high pressure side; a ring ³⁴chamber surrounding said nozzle needle; and a connection ³³formed in said housing between said high pressure side and said ring chamber.

3. An injector as defined in claim ²1, wherein said connection is formed as a circumferential ring-shaped groove provided in said housing.

4. An injector as defined in claim 2, wherein said nozzle needle has a ring-shaped ³⁵ surface which is loaded with high pressure through said connection between said high pressure side and said ring chamber.

5. An injector as defined in claim 1; and further comprising a hydraulic spring chamber, said nozzle needle having a transverse surface ³¹ arranged so that above said transverse surface of said nozzle needle control volumes which are contained in said hydraulic spring chamber ²³ act as a force directed opposite to an opening force of said nozzle needle.

26 6. An injector as defined in claim 1; and further comprising a refilling valve associated with said hydraulic spring chamber.

7. An injector as defined in claim 1; and further comprising a control ²⁹piston which is arranged in said housing parallel to said nozzle needle, said ^{LA?}hydraulic piston having an end surface which is loaded by a control volume of a hydraulic spring ^{D.I.}chamber and through a connection with high pressure.

8. An injector as defined in claim 1; and further comprising a valve ^{D.I.}body which is separate from said nozzle needle and formed as a slider which releases a nozzle inlet to a waste oil side.

9. An injector as defined in claim 1; and further comprising means forming restoring forces which counteract an opening force acting on said nozzle needle when high pressure acts on ^{? suggestion}said pressure stage, such that said restoring forces are produced by a pressure loading of a cross-³¹sectional surface through a hydraulic spring chamber and through pressure ^{28 DT}

